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dam, and he had no doubt of the correctness of the explanation which had been prepared by a gentleman of great practical judgment. The air confined between the dam and the sheet of water was constantly carried forward with the down-rushing stream, and burst out at short intervals below the sheet of water. At each outbreak of air, there is a strong inward puff at the ends of the dam, accompanied with a waving back of the sheet towards the dam.

Professor Peirce announced that he had found quite simple forms for the differential coefficients, relatively to the elements of a planet's orbit, of the coefficients of the sine and cosine of the eccentric anomaly in Gauss's formulæ for the equatorial rectangular coördinates of the planet. Mr. J. E. Oliver has obtained a very near geometrical demonstration of these results.

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**Three hundred and thirtieth meeting.**

May 7, 1850. — MONTHLY MEETING.

The **PRESIDENT** in the chair.

The Corresponding Secretary read a letter from the Hon. W. M. Meredith, Secretary of the Treasury, acknowledging the reception of the report made at the February meeting by a committee of the Academy appointed for that purpose, recommending the establishment of permanent marks to record the present mean sea-level; and stating that, "the object being deemed important by the Department, and the fitness of its connection with the Coast Survey recognized, authority will be given to the Superintendent to cause the necessary observations to be made, and the results communicated to the Academy."

Dr. Pickering offered some further remarks on the Egyptian Astronomical Cycle.

On motion of Mr. Eliot, the committee formerly appointed to memorialize the Legislature of the Commonwealth, in

behalf of the establishment of meteorological observations at certain stations in Massachusetts, was authorized to apply to his Excellency the Governor for the appropriation recently made for that purpose, and to superintend its expenditure in furtherance of the object for which it was appropriated.

Mr. Eliot also gave an account of an organ with perfect intonation, the octave being divided into thirty-seven parts, which has recently been constructed, and is now on exhibition in Boston.

Dr. Locke, of Cincinnati, at his own request, made to the Chairman of the Rumford Committee, had leave to withdraw his communication on the Electro-Chronograph, &c., and to substitute another, if he shall think proper to do so.

#### DONATIONS TO THE LIBRARY,

FROM JUNE, 1849, TO JUNE, 1850.

*Kops and Trappen.* Flora Batava : Fasc. 137, 152, 153, 154, 155, 156, 158, 159. Also, Title and Index to Vol. X. 4to. Amsterdam, 1849. From the Netherlands Government, through W. S. Campbell, Esq., U. S. Consul at Rotterdam.

*W. W. Greenough.* The Conquering Republic, an Oration delivered before the Municipal Authorities of the City of Boston, July 4th, 1849. 8vo pamph. 1849. From the Author.

*B. A. Gould, Jr.* Review of Herschel's Outlines of Astronomy. 8vo pamph. Cambridge, 1849. From the Author.

The American Journal of Science and Arts. Second Series, Vol. VIII., Nos. 23, 24, 25, 26. From the Editors.

*S. Lovén.* Index Molluscorum Litora Scandinaviæ Occidentalia Habitantum. Faunæ Prodromum. (Öfversigt af K. Vet. Akad. Förh. 1846, 13 Maji, 10 Junii.) — Malacozoologi. (Öfversigt af K. Vet. Akad. Förh. d. 9 Juni 1847.) Holmiæ, 1846–47. 8vo pamph. From the Author.

Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar. Årg. 4. 1847. No. 7, 8, 9, 10. Årg. 5. 1848. No. 1, 2, 3, 5, 6. Stockholm. 8vo pamph. From the Royal Academy of Sciences of Stockholm.

*J. H. Maedler.* Tabula Generalis Stellarum Duplicium Indicationem

*Motus Gyratorii Exhibentium.* Dorpati, 1849. folio pamph. From the Author.

*Prof. R. S. McCulloh.* Report from the Secretary of the Treasury, of Scientific Investigations in Relation to Sugar and Hydrometers. Made under the Superintendence of Professor A. D. Bache. Revised Edition. Washington, 1848. 8vo. From the Hon. R. C. Winthrop.

Patent-Office Report for 1847. Washington, 1848. 8vo. From the Hon. R. C. Winthrop.

*N. D. Wailly.* Elements de Paleographie. Paris, 1838. 2 vols. folio. From the French Minister of Public Instruction, through Mr. Alexander Vattemare.

The Report of the British Association for the Advancement of Science, for the Year 1848. 8vo. London, 1849. From the British Association.

*Prof. Mitchell.* Manner of Observing and Recording the Celestial Phenomena by a Machine. (A newspaper published at Cincinnati, 19th Sept., 1849. With a Plate.) From Prof. Mitchell.

*Prof. C. B. Adams.* Monograph of *Stoastoma*, a new Genus of new Operculated Land Shells. Amherst, Mass., Sept., 1849. 4to pamph. From the Author.

*Victor Jubien.* Poesies, Vaudevilles, &c. Maurice, 1842. From the Author.

*Victor Jubien.* *Precis de Rhetorique, suivi des Règles auxquelles sont assujettis les differents Ouvrages de Litterature.* Maurice, 1843. From the Author.

*James D. Dana.* Geology of the United States Exploring Expedition. 1 vol. 4to. With an Atlas of Plates. folio. Philadelphia, 1849. From the Author.

*Prof. C. B. Adams.* Contributions to Conchology, Nos. 1, 2, 3, 4, 5. 8vo pamph. Amherst, Massachusetts, 1849-50. From the Author.

*Hon. R. C. Winthrop.* An Address before the Maine Historical Society, at Bowdoin College. Boston, 1849. 8vo pamph. From the Author.

*Alfred Smee.* Elements of Electro-Biology; or the Voltaic Mechanism of Man; of Electro-Pathology, especially of the Nervous System; and of Electro-Therapeutics. 8vo. London, 1849. From the Author.

*Col. Edward Sabine.* Directions for the Use of a Small Appa-

ratus to be employed with a Ship's Standard Compass, for the Purpose of ascertaining at any Time, whether at Sea or in Harbour, the changing Part of the Deviation, which is usually different in different Parts of the Globe. 8vo pamph. London, 1849. From the Royal Society of London.

Proceedings of the Royal Society, for 1847 and 1848. Nos. 69, 70, 71, 72. From the Society.

Philosophical Transactions of the Royal Society for 1848. Do. for 1849, Part First. 4to. — Catalogue of the Members of the Royal Society, 1847, and Do. for 1848. From the Society.

*George Ticknor*. History of Spanish Literature. New York, 1849. 3 vols. 8vo. From the Author.

Transactions of the Royal Irish Academy. Vol. XXII. 1848 – 49. 4to. Dublin, 1849. From the Academy.

Proceedings of the Royal Irish Academy. Vol. III. 1845 – 47. Vol. IV., Parts 1 and 2. 1847 – 49. 8vo. Dublin. From the Academy.

*M. Tuomey*. Report on the Geology of South Carolina. 4to. Columbia. 1848.

*Robert W. Gibbes, M. D.* New Species of Myliobates from the Eocene of South Carolina, with other Genera, not heretofore observed in the United States. 4to pamph. From the Author, through Dr. Warren.

Transactions of the Zoölogical Society of London. Vol. III., Parts 2, 3, 4, 5, 6. From the Zoölogical Society.

Annuaire Magnetique et Météorologique du Corps des Ingenieurs des Mines, ou Recueil d'Observations Météorologique et Magnetique Faites dans l'étendue de l'Empire de Russie et publiées par A. T. Kupffer, Directeur, etc. Année 1845. Nos. 1, 2. 4to. St. Petersburg, 1848. — Résumé des Observations Météorologique Faites dans l'Empire de Russie, etc. 1<sup>er</sup> Cahier. St. Petersburg, 1846. From the Imperial Academy of St. Petersburg.

Occultations visible in the United States during the Year 1850. Computed by John Downes, at the Expense of the Fund appropriated by Congress for the Establishment of a Nautical Almanac, and published by the Smithsonian Institution. 4to. Washington, 1849. From the Hon. R. C. Winthrop.

Astronomical Journal, Nos. 1 to 9. From the Editor, Benjamin A. Gould, Jr.

Magnetical and Meteorological Observations at the Magnetic and

Meteorological Observatory at the Girard College, Philadelphia. Made under the Direction of Prof. A. D. Bache. 1840–45. 3 vols. 8vo. Plates, 1 vol. Washington, 1847. (Pub. Doc.) From the Hon. R. C. Winthrop.

Annual Report of the Commissioner of Patents for the Year 1848. 8vo. Washington. From H. I. Bowditch.

*Joseph Leidy, M. D.* 1. History and Anatomy of the Hemipterous Genus *Belostoma* (Art. 6, in Jour. Acad. Natural Sciences, Philadelphia). — 2. Descriptions of Two Species of *Distoma*, with a Partial History of one of them. Plate. (Art. 26, Vol. I., N. S., Jour. Acad. Nat. Sc.) From the Author.

*F. C. Zantedeschi.* Annali di Fisica. Fasc. 2, 3, 4. 8vo pamph. Padova, 1849–50. From the Author.

Report of the Select Committee of the Legislature of 1849, on the Publication of the Natural History of the State of New York. 8vo. Albany, 1850.

*Prof. C. B. Adams.* Monograph of Vitrenella, a new Genus of new Species of Turbinidæ. Amherst, 1850. From the Author.

*James D. Dana.* On the Isomorphism and Atomic Volume of some Minerals, with a Table of Atomic Weights. (From the American Journal of Science and Arts.) 8vo pamph. March, 1850. From the Author.

Descriptions of the Instruments and Process used in the Photographic Self-Registration of the Magnetical and Meteorological Instruments at the Royal Observatory, Greenwich (extracted from the Introduction to the Greenwich Magnetical and Meteorological Obs., 1847). 4to pamph. London.

Letters on Certain Passages in the Life of Admiral Sir John Hawkins. (Temp. Elizabeth.) From John Paine Collier, Esq., and Captain W. H. Smyth. 4to pamph. London, 1850.

Boston Journal of Natural History. Vol. IV., No. 1. 8vo. Boston, 1850. From Soc. Nat. Hist.

*U. S. Coast Survey.* Maps of Huntington Bay, Harbours of Captains Island East, and Captains Island West, and Mouth of Chester River. From Prof. A. D. Bache, Superintendent of U. S. C. S., by request of Hon. R. C. Winthrop.

Catalogue of the New York State Library, January, 1850. 8vo. Albany, 1850. From the Regents of the University of the State of New York.

Proceedings of the Royal Astronomical Society. Vol. X., No. 2. Dec. 14, 1849. From the Royal Astr. Soc.

Astronomical Observations made at the Royal Observatory, Greenwich, in the Year 1847. 4to. London, 1849.

Message from the Governor of Pennsylvania, transmitting the Reports of the Joint Commissioners, and of Col. Graham, U. S. Engineers, in Relation to the Boundary Lines between the States of Pennsylvania, Delaware, and Maryland. 8vo pamph. Harrisburg, 1850. From Col. J. D. Graham.

*B. A. Gould, Jr.* Report to the Smithsonian Institution, on the History of the Discovery of Neptune. 8vo pamph. Washington, 1850. From the Author.

*Prof. C. B. Adams.* Contributions to Conchology. Nos. 6 and 7. 8vo pamph. From the Author.

Proceedings of the American Philosophical Society. Vol. V., No. 44. From the Society.

Proceedings of the Academy of Natural Sciences of Philadelphia. Vol. IV., Nos. 9, 10, 11, 12. Vol. V., No. 1. 8vo pamph. 1849–50. From the Academy.

Journal of the Academy of Natural Sciences, Philadelphia. Vol. I. 8vo. Vol. I., New Series, 4 Parts. 4to. Philadelphia, 1848–49. From the Academy.

Third Annual Report of the Regents of the University, of the Condition of the State Cabinet of Natural History, and the Historical and Antiquarian Collections annexed thereto. (State Document.) 1850. 8vo. From the Regents of the New York University.

Mémoires de la Société de Physique et d'Histoire Naturelle de Genève. Tom. XII., 1<sup>re</sup> Partie. Geneva, 1849. 4to. From the Society.

Premier Supplement au Tome XII. des Mém. Soc. Phys. et d'Hist. Nat. Genève. — Observations Astronomiques Faites à l'Observatoire de Genève dans l'Année 1846, par E. Plantamour. VI<sup>e</sup>. Serie. Geneva, 1848. — Second Suppl. au Tome XII., etc., etc. Geneva, 1849. 4to. From the Society.

Tables des Comptes Rendus des Séances de l'Académie des Sciences. Deuxième Semestre, 1847. Tom. XXV. — Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences; par MM. les Secrétaires Perpetuels. Tom. XXVI. 1848. Premier Semestre, Nos. 1–25. From the Academy of Sciences.

Twenty-ninth Annual Report of the Board of Direction of the Mercantile Library Association, Clinton Hall, New York. Jan., 1850. 8vo pamph.

Neu Denkschriften der Allg. Schweizerischen Gesellschaft für die gesammten Naturwissenschaften. Band. VII.—XIX. 4to. Neuchâtel, 1845.

On the Regio Cinnamomifera of the Ancients. By W. Desborough Cooley. With Maps. Read before the Royal Geol. Soc. of London, April, 1849. 8vo pamph. From the Hon. Edward Everett.

On the Tertiary and more recent Deposits in the Island of Nantucket. By E. Desor and E. C. Cabot. (In a Letter to Sir Charles Lyell, Pres. Geol. Soc.) 8vo pamph. 1849.

*Edward Jarvis, M. D.* Production of Vital Force. A Discourse delivered before the Massachusetts Medical Society, at their Annual Meeting, May 30th, 1849. 8vo. Boston, 1849. From the Author.

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**Three hundred and thirty-first meeting.**

May 28, 1850. — ANNUAL MEETING.

The PRESIDENT in the chair.

The Treasurer presented his annual report on the finances of the Academy, accompanied by the certificate of the Auditor.

Dr. Gould, from the Library Committee, and Dr. Gray, from the Committee of Publication, made verbal reports.

Mr. Everett moved resolutions of respect to the memory of the late William Vaughan, Esq., of London, an Honorary Member of the Academy, which were unanimously adopted.

Professor Treadwell, from the Committee on Meteorological Observations, read the following report:—

“The committee appointed, in February last, to consider the subject of meteorological observations, respectfully ask leave to report, that there are now in the possession of the Academy journals of observations, more or less complete, for the following periods:—

“Professor Winthrop’s Journal, from December 11th, 1742, to April 29th, 1779.

“Professor Wigglesworth’s Journal, from August 1st, 1780, to December 31st, 1789. Also for the year 1793.